
The Influence of AudioVisual Media on Ecological Intelligence and Critical Reasoning Ability in Class V Social Studies Learning at SD Negeri 1 Kabunderan, Purbalingga Regency

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ABSTRACT

Learning involves the active interaction of individuals with their environment, leading to behavioral changes. Effective learning encompasses being student-centered, promoting educational interaction, creating a pleasant learning atmosphere, using various methods, providing suitable materials, and ensuring a conducive environment and supporting facilities. This study aimed to improve critical thinking skills about the environment in elementary social studies by applying audio-visual learning media. Using a descriptive method with a quantitative approach, the research involved 32 grade V students from SD Negeri 1 Kabunderan, Purbalingga Regency. The results showed a significant relationship between the audio-visual learning model and ecological intelligence ($p = 0.038$) and between the audio-visual learning model and critical reasoning ability ($p = 0.037$). These findings indicate that audio-visual media effectively enhances both ecological awareness and critical thinking skills in elementary social studies learning.

Keywords: Audio Visual, Ecological Intelligence, Critical Reasoning Ability, Social Studies, Learning.

INTRODUCTION

Education, as defined by Achmad Munib (Solichah & Mariana, 2018), is a conscious and systematic effort carried out by individuals entrusted with the responsibility to influence students to develop habits and characteristics aligned with educational ideals (Hitt & Tucker, 2016). Faturrahman elaborates that education encompasses all efforts by educators to transfer their experiences, knowledge, and skills to students, aiding in the development of their talents, potentials, and abilities to lead fulfilling lives. Furthermore, according to the Law of the Republic of Indonesia No. 20 of 2003 concerning the National Education System (Kharisma & Pirmana, 2013), national education aims to cultivate students' potential to become devout, morally upright, knowledgeable, capable, creative, and responsible citizens who contribute to the dignity and advancement of the nation (Winataputra, 2016).

Learning is an activity of active interaction of individuals with their environment so that there is a change in behavior (Kelder, Hoelscher, & Perry, 2015). Effective learning activities generally include several aspects including student-centered, educational interaction, pleasant learning atmosphere, variety of methods, appropriate materials, conducive environment and supporting facilities (Laguador, 2014). Research on Improving Systems of Education (RISE)

Indonesia 2018 states that the emergency situation of learning in Indonesia is the main cause of incomplete learning (Lassa, Petal, & Surjan, 2023). (<https://theconversation.com/darurat-mutupembelajaran>).

Students' critical thinking prowess remains underdeveloped in Indonesia, a crucial skill essential for their academic and personal growth (Prasetyo, Joebagio, & Yamtinah, 2019). This deficiency becomes evident through analyses employing partial credit models (PCM). Research conducted by (Asyisyifa, WILUJENG, & Kuswanto, 2019) at a local school illustrates this, revealing that only a small fraction of students possess high-level critical thinking abilities, while a majority exhibit moderate skills, and a notable minority demonstrate low proficiency. Factors contributing to this deficit include unstimulating learning environments and limited interactive opportunities (Derakhshan, Kruk, Mehdizadeh, & Pawlak, 2021), resulting in the ineffective utilization of educational media, particularly in the realm of social studies. Consequently, a paradigm shift in educational practices is imperative (Mondol & Mohiuddin, 2020).

Addressing these challenges necessitates the adoption of interactive instructional media, with audio-visual tools emerging as the most viable solution. As posited by (Anggrayeni, 2015), audio-visual media represents a contemporary pedagogical approach that aligns with the advancements in science and technology, offering a multisensory learning experience that captivates both auditory and visual faculties. The amalgamation of these sensory elements renders audio-visual media inherently engaging (Stimberg, 2023), mitigating monotony in the learning process and enhancing comprehension. By leveraging the auditory and visual senses, audio-visual media facilitates the seamless transmission of information, fostering an environment conducive to comprehensive understanding (Errabo, Fujinami, & Isozaki, 2024).

According to (Angga, 2021), the use of audio-visual media is not difficult to apply in schools. Audio-visual media provide sounds and moving images so that they can attract children's interest in learning and affect ecological intelligence and critical reasoning skills in children (Kanematsu & Barry, 2016). Audio-visual media will affect the acquisition of more vocabulary and it is possible that children will be ecologically intelligent and reason critically (Pearson, Dorrian, & Litchfield, 2013).

Based on the exposure to this description, to improve critical thinking skills about the environment in elementary school social studies learning, the application of audio-visual learning media can provide solutions to care for the environment (De Sousa, Richter, & Nel, 2017).

RESEARCH METHODS

The study employed a descriptive methodology, employing a quantitative approach to gather and analyze data. As (Leo, 2013) outlined, descriptive methodology involves data collection to test hypotheses or address inquiries concerning public opinions on a given issue. Quantitative research, on the other hand, entails collecting and analysing numerical data to elucidate, forecast, and manage phenomena of interest.

The researchers undertook the study with grade V students from SD Negeri 1 Kabunderan, Purbalingga Regency, comprising a total of 32 individuals. Data gathering methods included field research techniques such as interviews, documentation, and the distribution of questionnaires. The researchers utilized a questionnaire instrument featuring a Likert scale with 10 response options, chosen for its widespread use and high reliability (Robinson, 2018).

RESULTS AND DISCUSSION

Table 1. Descriptive Statistics

	Audio_Visual	Mean	Std. Deviation	N
Ecological Intelligence	TGT	92,63	7,508	32
	NHT	89,28	4,794	32
	Total	90,95	6,472	64
Critical Reasoning Ability	TGT	54,09	5,602	32
	NHT	51,13	5,558	32
	Total	52,61	5,734	64

Table 2. Box's Test of Equality of Covariance Matrices^a

Box's M	6,923
F	2,227
df1	3
df2	691920,000
Sig.	,083

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Audio_Visual

The table above is a Box's Test table used to test the homogeneity of covariance between groups. The significant value of $0.083 > 0.05$ means that there is no difference in covariance / matrix of variance between groups, so the sample can be said to be homogeneous.

Table 3. Multivariate Tests^a

Effect		Value	Hypothesis			Sig.	Partial Eta Squared
			F	df	Error df		
Intercept	Pillai's Trace	,996	8367,615 ^t	2,000	61,000	,000	,996
	Wilks' Lambda	,004	8367,615 ^t	2,000	61,000	,000	,996
	Hotelling's Trace	274,348	8367,615 ^t	2,000	61,000	,000	,996
	Roy's Largest Root	274,348	8367,615 ^t	2,000	61,000	,000	,996
Audio_Visual	Pillai's Trace	,114	3,922 ^t	2,000	61,000	,025	,114
	Wilks' Lambda	,886	3,922 ^t	2,000	61,000	,025	,114
	Hotelling's Trace	,129	3,922 ^t	2,000	61,000	,025	,114

Roy's Largest Root	,125	3,922 ^t	2,000	61,000	,025	,114
a. Design: Intercept + Audio Visual						
b. Exact statistic						

In multivariate assays, Wilks' Lambda is the most frequently used. From the table above, it shows that the value of $F = 3.922$ with a significant value of $0.025 < 0.05$ which means H_0 is rejected and H_a is accepted so that there are differences in ecological intelligence and critical reasoning ability in social studies learning between students who are taught using the Audio Visual learning model.

Table 4. Levene's Test of Equality of Error Variances^a

		Levene Statistic	df1	df2	Sig.
Ecological Intelligence	Based on Mean	5,946	1	62	,018
	Based on Median	2,773	1	62	,101
	Based on Median and with adjusted df	2,773	1	46,161	,103
	Based on trimmed mean	4,933	1	62	,030
Critical Reasoning Ability	Based on Mean	,542	1	62	,464
	Based on Median	,135	1	62	,710
	Based on Median and with adjusted df	,135	1	61,990	,710
	Based on trimmed mean	,497	1	62	,483

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Audio Visual

Table 5. Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Ecological Intelligence	178,891 ^a	1	178,891	4,505	,038	,068
	Critical Reasoning Ability	141,016 ^b	1	141,016	4,530	,037	,068
Intercept	Ecological Intelligence	529438,141	1	529438,141	13343,732	,000	,995
	Critical Reasoning Ability	177135,766	1	177135,766	5689,727	,000	,989
Audio_Visual	Ecological Intelligence	178,891	1	178,891	4,505	,038	,068
	Critical Reasoning Ability	141,016	1	141,016	4,530	,037	,068
Error	Ecological Intelligence	2459,965	62	39,677			
	Critical Reasoning Ability	1930,215	62	31,133			
Total	Ecological Intelligence	532077,000	64				

	Critical Reasoning Ability	179207,000	64
Corrected Total	Ecological Intelligence	2638,855	63
	Critical Reasoning Ability	2071,234	63
a. R Squared = ,068 (Adjusted R Squared = ,053)			
b. R Squared = ,068 (Adjusted R Squared = ,053)			

Explanation:

1. The relationship between Audio Visual learning models and ecological intelligence has a significant value of $0.038 < 0.05$. This shows that there are differences in ecological intelligence between students who learn and the Audio Visual learning model
2. The relationship between the audio-visual learning model and the ability to reason critically has a significant value of $0.037 < 0.05$. This shows that there are differences in critical reasoning skills between students who learn and the Audio Visual learning model

Discussion

The SPSS calculations revealed that there were variances in the utilization of audio-visual media in relation to ecological intelligence and critical reasoning skills among fifth-grade students at SD Negeri 1 Kabunderan, Purbalingga Regency. This was demonstrated through the implementation of audio-visual media in learning, wherein a comparison of student learning outcomes using the SPSS application yielded a probability value of 0.038 for ecological intelligence. This probability value was compared to the predetermined threshold of 0.05, and since 0.038 is less than 0.05, it can be inferred that there are indeed discrepancies in ecological intelligence between students who engage in the audio-visual learning model. Likewise, the results for students' critical reasoning abilities also exhibited a probability value of 0.037, which is less than 0.05, further supporting the conclusion that disparities exist in critical reasoning skills among students who learn through the audio-visual learning model.

CONCLUSION

Based on the results of research and discussion, several conclusions can be drawn as follows: there is an influence of audio-visual-assisted digital media on students' ecological intelligence and critical reasoning skills in social studies learning. Additionally, there is a difference in ecological intelligence between students who learn with the Audio Visual learning model, with a significant value of 0.038. Similarly, there is a difference in critical reasoning ability between students who learn with the Audio Visual learning model, with a significant score of 0.037.

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